

**REMARKS**

This Amendment is in response to the supplemental first Office action mailed on 25 June 2004 (Paper No. 3). Upon entry of this amendment, claims 1-21 will be pending. Applicant has amended claim 1 by this amendment and has newly added claims 16-21 by this amendment.

In Paper No. 3, the Examiner rejected claims 11-15 under 35 U.S.C. §102 for alleged anticipation by Lay, U.S. Patent No. 6,098,158. Applicant has the following comments.

**Regarding claim 11**, Applicant claims “setting said instruction pointer of said CPU to point to said boot image in main memory”. In Paper No. 3, the Examiner indicates that column 1, lines 21-23 of Lay ‘158 teaches this feature. Applicant disagrees. Column 1, lines 21-23 of Lay ‘158 state, “After the module is loaded into memory, that module’s initialization code must be executed to initialize local variables, memory and associated devices.” Applicant submits that this quote from Lay ‘158 does not teach anything about an instruction pointer of a CPU, or anything about pointing the instruction pointer to a boot image in main memory. Furthermore, in Paper No. 3, the Examiner did not provide any further guidance or any explanation as to why this section of Lay ‘158 teaches this limitation of Applicant’s claim 11. Applicant submits that neither this portion of Lay ‘158 nor any other portion of Lay ‘158 teaches this instruction pointer limitation of Applicant’s claim 11. Because this limitation is not taught by Lay ‘158, Applicant submits that the all elements rule

has not been adhered to for an anticipation rejection. Therefore, the rejection of claims 11-15 must be withdrawn.

**Regarding depending claim 14**, Applicant claims, “wherein said step of reading out said boot image is accomplished when said boot image is in a compressed format.” In Paper No. 3, the Examiner states that “Lay further teaches said boot image is accomplished when said boot image is in a compressed format (Lay: see for example, Column 1 Line 53).” Applicant disagrees.

The cited section of Lay ‘158 relied on by the Examiner in Paper No. 3 to reject claim 14 says, “One known approach to “soft booting” an operating system (such as DOS) is to save a compressed image of the operating system in an extended memory area of the computer’s physical memory (e.g., RAM) and then boot the computer from that static image.” Unlike this passage of Lay ‘158, Applicant’s invention as claimed does not save a compressed image in RAM. Applicant stores the compressed boot image in “a memory for storing a boot image” which is different from the main memory or RAM. The memory for storing the boot image is either a CD ROM or a boot image memory as claimed in claims 12 and 13. It is in this boot image memory or CD ROM that the image is compressed. When the image is read out, it is decompressed. The decompressed boot image is stored in main memory (or RAM) to be executed. Applicant does not store a compressed boot image in main memory. Applicant stores a decompressed boot image in RAM. The compressed boot

image is stored elsewhere. Thus, Applicant submits that column 1, line 53 of Lay '158 does not teach Applicant's claim 14 but instead teaches away from Applicant's claim 14. Therefore, the rejection must be withdrawn.

Applicant further submits that this section of Lay '158 pertains to a "soft boot" which is also a "warm boot" which means that the computer is already on and not an ordinary boot. Applicant submits that one would not ordinarily expect that the power would interrupt and destroy an ability of a computer to warm boot or soft boot because unlike ordinary booting, the power is not powered down in a warm or soft boot.

**Regarding claim 15**, Applicant claims, "further comprising the step of decompressing said boot image after said compressed boot image is read out." In Paper No. 3, the Examiner states that column 6, line 53 of Lay '158 teaches this feature. Applicant has carefully reviewed this section of Lay '158 and submits that this cited passage of Lay '158 has nothing to do with compression or decompression.

It is therefore assumed that the Examiner made a mistake in Paper No. 3 and instead meant column 1, line 53 (not column 6, line 53) of Lay '158. Applicant submits that there is no teaching of reading out the compressed boot image from RAM in Lay '158.

In Paper No. 3, the Examiner states, "The compressed boot image must be

decompressed before the execution after read out - i.e., the decompression is considered as the inherited feature of compression technique.” Applicant disagrees. Applicant submits that if what the Examiner assumed is true, then the compressed data in RAM is read out and decompressed. However, in Applicant’s claimed invention, the compressed data is read out and decompressed out of a boot image memory and the decompressed image is stored in main memory or RAM for execution. This feature is not taught by Lay ‘158. Instead, Lay ‘158 teaches away from this feature by storing compressed data in RAM instead of storing decompressed data in RAM. Because of this, the rejection of claim 15 must be removed.

In Paper No. 3, the Examiner rejected claims 1-10 under 35 U.S.C. §103 for alleged unpatentability over Lay ‘158 in view of Oka, U.S. Patent No. 5,448,741. Applicant has the following comments.

Regarding the instruction pointer features of claims 1 and 10, Applicant traverses their rejection for the same reason as described in the traversal of claim 11. Applicant submits that Lay ‘158 does not teach anything about an instruction pointer of a CPU, or anything about pointing the instruction pointer to a boot image in main memory. Furthermore, in Paper No. 3, the Examiner did not provide any further guidance or any explanation as to why Lay ‘158 teaches this limitation of Applicant’s claims 1 and 10. Applicant submits that Lay ‘158 nor any other applied prior art teaches this instruction pointer limitation of Applicant’s claims 1 and 10. Therefore, the rejection to claims 1 and

10 must be withdrawn.

In claims 1 and 7, Applicant claims that the main memory receives the boot image when the main power is shut off. Applicant also claims that the main memory is powered by the auxiliary power when the main power is shut off. Applicant also claims that the boot image is executed when in the main memory. Thus, Applicant's invention as claimed provides a fast and efficient method and apparatus for booting a computer. When the computer is powered down, the boot image is moved to the main memory. This is so the boot image can be quickly executed without having to transfer the boot image again to a different place for execution. Applicant submits that this notion of transferring the boot image to an auxiliary powered main memory for execution there when the main power to the computer is turned off is not contemplated by the applied prior art, taken either singly or in combination. This notion of then executing the boot image in main memory without further transfer or moving of the boot image is also not contemplated by the prior art.

In Paper No. 3, the Examiner relies on Oka '741 for a teaching of a backup power supply that powers a RAM to maintain data in the RAM if the main power switch to the computer is turned off. In Paper No. 3, the Examiner also relies on column 1, lines 61-62 of Lay '158 for a teaching of a bootstrap image stored in a non volatile memory for the purposes of protection against a power failure. However, Applicant notices that column 1, lines 61-62 of Lay '158 actually does not discuss Lay's invention because it is a discussion of

Background art, in particular, U.S. Patent No. 5,519,869 to Payne et al. Therefore, column 1, lines 61-62 is not really about Lay '158 but is instead about Payne '869. This is important because the Examiner, in Paper No. 3, relies heavily on column 1, lines 61-62 of Lay '158 to reject Applicant's claims 1-10. However, the Examiner never mentions, and the Examiner never cites or enters the Payne '869 patent into the record. Further, the Examiner never justifies a motivation for combining the features of Payne '869 with the features of Lay '158 as is required. Therefore, Applicant is hereby entering into the record the Payne '869 patent via an IDS 1449 by this amendment.

Applicant has studied Payne '869 as a whole and submits that Payne '869 seems to indicate that a bootstrap image 40 may be stored in a DASD 10 memory which means "direct access storage device" which is a non volatile memory so that the bootstrap code avoids loss due to a power failure. However, it is kindly noted that column 6, lines 19-22 of Payne '869 that this bootstrap image must then be read to main storage 16 to be executed and to boot the system. This is contrary to Applicant's claimed invention where the boot image does not have to be relocated to execute from the main memory. In other words, Applicant's invention executes the boot image and reboots the computer from the same memory that is attached to a power backup. It is this feature that is not taught by the prior art and is deserving of patent protection. The prior art, either taken singly or in combination, does not teach that the same memory with the battery backup is the same memory for execution of the boot image. In other words, once Applicant's boot image is stored in the battery backed up

main memory, the boot image need not be moved again to execute as in Payne '869. Neither Lay '158 nor Oka '741 nor Payne '869 teach or suggest this feature.

Regarding Applicant's claim 1, Applicant claims that the main memory has a power backup in limitation (b), that the boot image is moved into this main memory upon power down in limitation (d) and that it is this same main memory that executes the boot image in limitation (e). Payne '869 requires that the bootstrap code must be transferred out of the power backed up DASD and into a main memory for execution. The fact that Applicant's invention need not transfer the boot image from the power backed up main memory for execution saves time and processing allowing for a faster and more efficient booting. Because this novel feature is not taught or suggested by the applied prior art, the rejection to claim 1 must be withdrawn.

Regarding claim 7, Applicant claims that the boot image is transferred into the power backed up main memory when the system is powered off. In Payne '869, there is no comparable step. Although step 32 of FIG. 2 of Payne '869 indicates that the boot strap image is written into DASD 10, there is absent any teaching that this is done in response to or in conjunction with the powering down of the computer as in Applicant's claim 7.

In the rejection of Applicant's claim 7 in Paper No. 3, the Examiner relies on column 3, lines 10-12 and column 4, lines 13-18 of Oka '741 for a teaching of determining whether

the computer is powered down. Applicant disagrees. Applicant has carefully reviewed these portions of Oka '741 and can not find any teaching or suggestion of such a feature.

In the rejection of Applicant's claim 7 in Paper No. 3, the Examiner relies on column 1, lines 53-58 of Lay '158 1) for a teaching of storing a boot image in RAM to save boot time and 2) for a teaching of the need to cover for the problem of losing the boot image when the power is turned off. Applicant disagrees. Applicant has reviewed this section of Lay '158 and submits that this section of Lay '158 pertains to a "soft boot" which is also a "warm boot" which means that the computer is already on and not an ordinary boot. Applicant submits that one would not ordinarily expect that the power would interrupt and destroy an ability of a computer to warm boot or soft boot because unlike ordinary booting, the power is not powered down in a warm or soft boot. Also again, this section of Lay '158 is part of the Background section and is not thus part of Lay's invention. Therefore, this paragraph cannot and should not be used for a teaching of a need for a RAM that stores a boot image and has a power back up. Further, this feature should not be combined with the features of Lay's invention as it is not part of Lay's invention and Lay did not intend that these features be combined with each other as was done by the Examiner in Paper No. 3

In Paper No. 3 and also in the rejection of claim 7, the Examiner focuses and relies heavily on the fact that Oka '741 teaches "an intelligent power supply". It is also kindly noted that the phrase "intelligent power supply" is never defined in either Oka '741 or in



Paper No. 3 by the Examiner. Nevertheless, the Examiner uses the phrase “intelligent power supply” countless number of times in Paper No. 3. From the Examiner’s usage, it seems that the Examiner is inferring that power supply 30 of Oka ‘741, which is referred to in column 4, lines 13 and 14 of Oka ‘741 as an “intelligent power supply” is some sort of battery backup. Applicant disagrees. Applicant submits that one cannot infer that power supply 30 of Oka ‘741 or the phrase “intelligent power supply” infers a battery backup or an auxiliary power supply. Such an inference is completely unwarranted. Further, the Examiner’s use of this phrase “intelligent power supply” repeatedly throughout Paper No. 3 without defining it is vague, misleading and incomplete. Applicant submits that if the Examiner wants to use this phrase, he should instead, for the sake of compact prosecution, clearly define exactly what he means by this phrase. If the Examiner should instead use Oka ‘741 as a teaching of an “intelligent power supply”, then he should explain what Oka ‘741 intends by this phrase by clearly citing a column number and line numbers where Oka ‘741 defines this phrase. Otherwise, the use of this phrase in the claim rejections of Paper No. 3 is confusing, vague and misleading.

Regarding the Examiner’s comments on page 9 of Paper No. 3 (element “c” of claim 7), as discussed before, column 1, lines 61-62 of Lay ‘158 is in the Background section of Lay ‘158 is describing the Payne ‘869 patent and not describing Lay’s fast booting invention. Therefore, it was improper for the Examiner, in Paper No. 3 to draw an inference of a tie or nexus between fast booting of Lay ‘158 and storage of a bootstrap image in a non volatile

memory of Payne '869 without a motivation to combine. Applicant submits that if Payne '869 and Lay '158 are combinable, the Examiner needs to find a teaching of why they are combinable in the applied prior art. The mere fact that features of Payne '869 are mentioned in the Background section of Lay '159 does not infer that the inventive concepts of these two patents are combinable and does not mean that Lay intended features from these two patents are combinable. Applicant's submits that the Background section of Lay '159 is not describing the invention of Lay '159 but merely providing a history or a background to illustrate what is needed to be done and should thus not be treated as part of Lay's invention.

Further, Payne '869 transfers the boot strap code out of the non volatile memory into another memory for execution while Applicant executes the boot image in the power backed up main memory. Thus, Payne '869 lacks the quickness and efficiency in the booting that Applicant's invention has. It is therefore requested that if the Examiner should choose to use any features of the Payne '869 patent, the Examiner should instead directly apply Payne '869 and then provide a motivation for combining Payne '869 with Lay '159.

Applicant is amending claim 1 by this amendment to correct for a minor error.

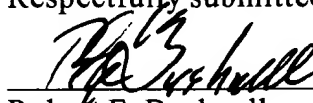
Applicant is newly adding claims 16-21 by this amendment in order to emphasize features not taught by the prior art. These features include that the computer is booted using the boot image in the main memory without further moving, that the steps of transferring the

boot image to main memory are done after the power to the computer is powered down, and that the boot image in the main memory is decompressed. Entry of and favorable examination of these claims is respectfully requested.

A fee of \$18.00 is incurred by the addition of one (1) claim in excess of 20. Applicant's check drawn to the order of Commissioner accompanies this Response. Should the check become lost, be deficient in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

In view of the above, it is submitted that the claims of this application are in condition for allowance, and early issuance thereof is solicited. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

Respectfully submitted,



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